

WHAT IS CLAIMED IS:

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1. A control method of a rotational speed of a screw for an injection molding machine, wherein rotation of a motor is transmitted the screw disposed within a cylinder member attached to an injection frame, comprising
10 the steps of:

(a) sending an electric current to a stator attached to the injection frame;

(b) rotating a rotor which is disposed radially inward of the stator, and which includes a hollow and
15 cylindrical member and a magnet attached to the hollow and cylindrical member; and

(c) transmitting rotation of the rotor to the screw.

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2. The control method of a rotational speed of a screw for an injection molding machine, as claimed in
25 claim 1,

wherein the rotation of the rotor is transmitted to the screw via a rotary slide member, so that the screw is rotated, and a resin entered to the injection molding machine is moved into and melted in the cylinder member.

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3. The control method of a rotational speed of a

screw for an injection molding machine, as claimed in claim 2, further comprising the step of:

(d) rotating so that the rotary slide member retreats.

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4. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 2, further comprising the step of:

(e) generating a force of restraint to the rotor after the resin is melted, so that the screw is caused to advance in a state where the screw is not rotated.

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5. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 1, further comprising the step of:

(f) rotating an element to be detected upon the rotation of the rotor, and detecting a rotational speed of the rotor by a detecting element disposed in opposition to the element to be detected, and thereby a feedback control is performed.

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6. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 5,

wherein the element to be detected does not come in contact with the detecting element.

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7. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 5,

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wherein the detecting element includes a magnet, and converts distortion of magnetic lines of force generated by rotating recess and projection configurations formed at the element to be detected to an electric signal.

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8. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 1,

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wherein a ball screw is disposed radially inward of the rotor, and

the hollow and cylindrical member is disposed radially outward of the ball screw.

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9. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 2,

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wherein the rotary slide member is disposed radially inward of the rotor, and

the hollow and cylindrical member is disposed radially outward of the rotary slide member.

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10. A control method of a rotational speed of a screw for an injection molding machine, wherein rotation of a motor is transmitted the screw disposed within a cylinder member attached to an injection frame, comprising the steps of:

(a) sending an electric current to a stator attached to the injection frame;

(b) rotating a rotor which is disposed radially inward of the stator, the screw, and an element to be detected; and

(c) detecting a rotational speed of the screw by a detecting element disposed in opposition to the element to be detected and in a manner where the detecting element does not come in contact with the element to be detected.

11. The control method of a rotational speed of a screw for an injection molding machine, as claimed in claim 10,

wherein the rotor includes a hollow and cylindrical member, and a magnet attached to the hollow and cylindrical member.